Planetary Data System (PDS)

Request for Information (RFI)

NNH15ZDAO12l

The First Step RFI in the PDS Roadmap

Introduction

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The Planetary Data System (PDS) archives electronic data products from NASA planetary missions -- as well as some ground-based and laboratory data sets -- sponsored by NASA's Science Mission Directorate. It actively manages the archive to maximize its usefulness. All PDS-curated products are stored in a well-defined format, peer reviewed, fully documented, and available online to scientists and to the public.

In August the PDS recently completed a competitive selection for the scientific Discipline Nodes and that system now includes the Ring-Moon Systems and Cartography and Imaging Sciences Nodes.

The PDS is moving to an "institute" governance model with our key science archiving teams funded through cooperative agreements.

NASA is initiating a PDS roadmap activity targeted at the 2017-2026 period.

Architecture
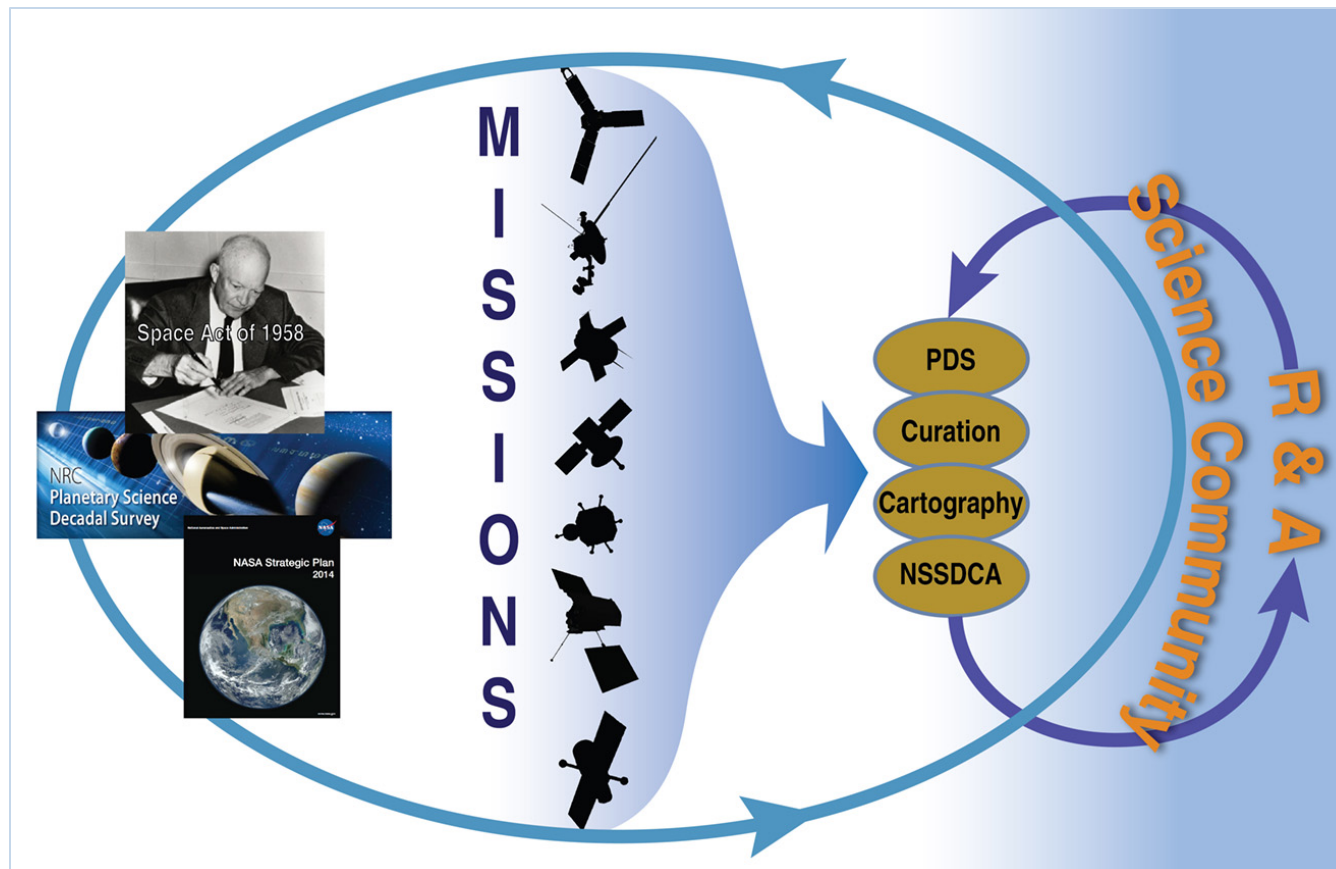
PDS in the Planetary Science Division
"phase space"

PDS Mission and Vision

Mission Statement

The Planetary Data System facilitates achievement of NASA's planetary science goals by efficiently collecting, archiving, and making accessible digital data and documentation produced by or relevant to NASA's planetary missions, research programs, and data analysis programs.

Our vision

- Gather and preserve the data obtained from exploration of the Solar System.

- Facilitate new and exciting discoveries by providing access to and ensuring usability of those data to the worldwide community.

- Inspire the public through availability and distribution of the body of knowledge reflected in the PDS data collection.
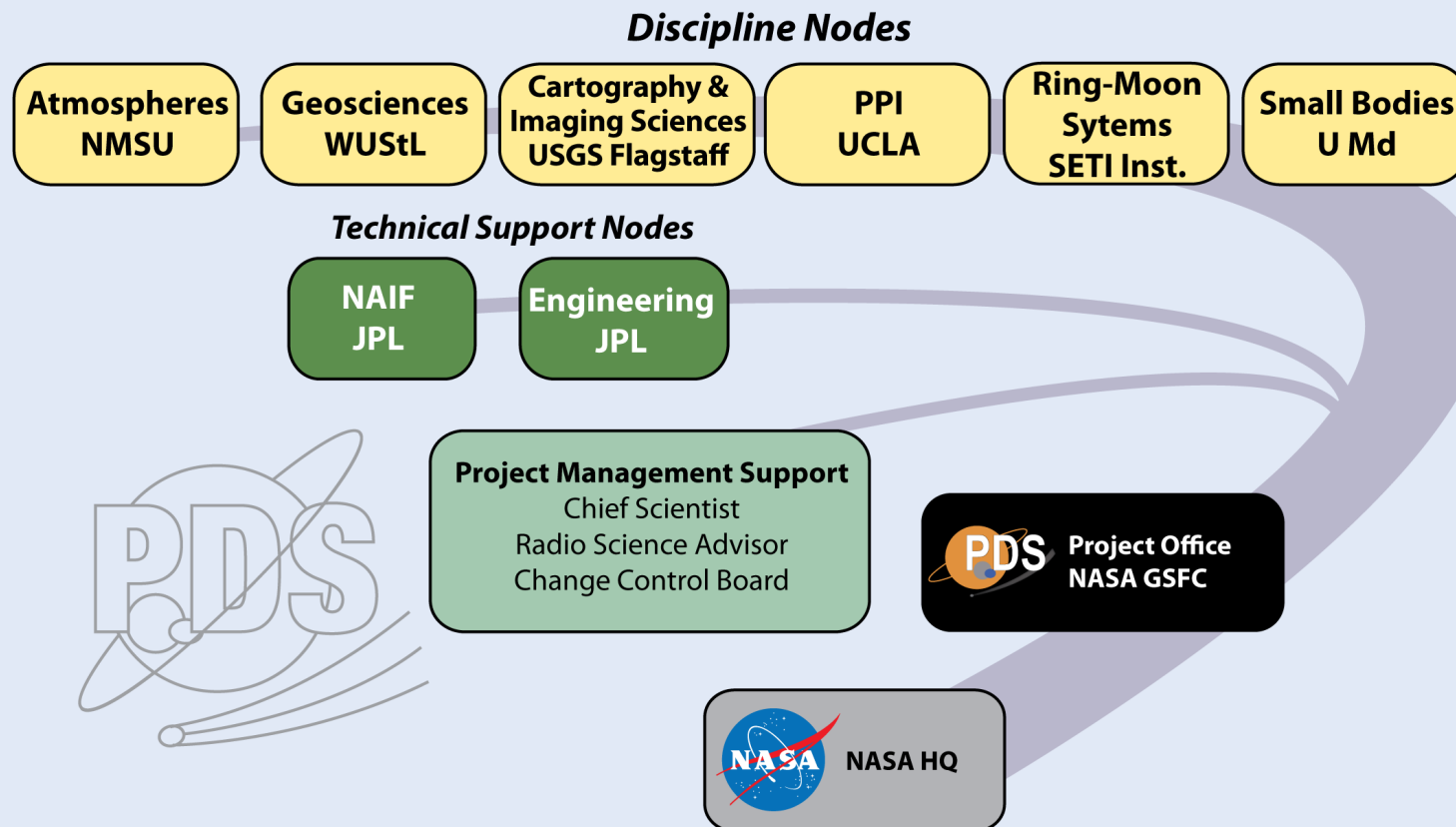
PDS is a *federation* of distributed discipline and service nodes (shown on next page). Missions work with PDS teams whose expertize matches the science focus of the mission.

PDS Organization

Current Organization of the Planetary Data System

Discipline Nodes

Atmospheres NMSU	Geosciences WUStL	Cartography & Imaging Sciences USGS Flagstaff	PPI UCLA	Ring-Moon Sytems SETI Inst.	Small Bodies U Md

Technical Support Nodes

NAIF JPL **Engineering JPL**

Project Management Support
Chief Scientist
Radio Science Advisor
Change Control Board

PDS Project Office NASA GSFC

NASA HQ

Who are we?

Discipline Nodes

Atmospheres Node:
New Mexico State University,
Las Cruces, New Mexico
(Nancy Chanover, Manager)

Geosciences Node:
Washington University in St. Louis, Missouri
(Ray Arvidson, Manager)

Cartography & Imaging Sciences Node:
US Geological Survey, Flagstaff, Arizona
(Lisa Gaddis, Manager)

Planetary Plasma Interactions Node:
University of California, Los Angeles, California
(Raymond Walker, Manager)

Ring-Moon Systems Node:
SETI Institute, Mountain View, California
(Mark Showalter, Manager)

Small Bodies Node:
University of Maryland, College Park, Maryland
(Michael A'Hearn, Manager)

Support Nodes

Engineering Node:
Jet Propulsion Lab, Pasadena, California
(Dan Crichton , Mgr.)

Navigation and Ancillary Information Facility:
Jet Propulsion Lab, Pasadena, California
(Chuck Acton, Mgr.)

Management

William Knopf Program Executive, NASA Headquarters

Micheal New Program Scientist, NASA Headquarters

Ralph McNutt PDS Chief Scientist, JHU Applied Physics Lab

Tom Morgan Project Manager, NASA GSFC

Reaching outward –
International Planetary Data Alliance

IPDA Members

- Italian Space Agency
- National Centre for Space Studies (CNES – France)
- China National Space Agency
- German Aerospace Center
- European Space Agency
- Space Research Institute (Russia)
- Indian Space Research Organization
- Japanese Aerospace Exploration Agency
- National Air and Space Administration
- United Kingdom Space Agency

PDS Roadmap Activity

Goal

Develop an implementable Vision for the PDS that sits within NASA's broad principles for archiving all products from planetary Exploration. Focus of the activity if 2017 – 2026.

Approach

- Think 20 years out for Missions.

- Think 10 years out for flight technologies.

- Think 5 years out for changes in the IT infrastructure.

- Ask the community: Request for Information (RFI), informational sessions at National meetings.

- Insure that IT implementation is consistent with current Federal Best Practices (https://playbook.cio.gov/).

- Effort led by our PDS Chief Scientist, Dr. Ralph McNutt.

PDS Roadmap Activity

PDS Roadmap Activity

Key Questions

- What tools, resources, workflows, tutorials, and interfaces will future users expect or require?

- How can the interaction between the PDS and data providers -- missions and individual researchers -- be improved in order to make the archiving process seamless and less costly to both data providers and the PDS?

- How can the interaction between the PDS and data providers be improved to move data from the provider to the public as rapidly as possible?

- What role should the PDS play, relative to other archiving alternatives including scientific journals, in providing the public access to the data that is the product of NASA's funded research and the basis of published scientific studies?

PDS Roadmap Activity

Key Questions (Cont'd)

- What is the highest priority need for integration between PDS data products and either cartographic products, sample material, or data from the Minor Planets Center (or all of them)?

- What role should the PDS play in encouraging the development of higher-order data products, and ensuring archive quality is quickly achieved?

- Are there identifiable improvements to the current search capabilities of the PDS that would allow researchers improved access to data products and metadata?

Questions concerning this RFI:
  Dr. Michael New, NASA HQ, 202-358-1766, michael.h.new@nasa.gov.

Questions concerning the post-RFI PDS Roadmap Activities:
  Dr. Ralph McNutt, JHU APL, 443-778-5435, ralph.mcnutt@jhuapl.edu.